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'"Thou hast most traitorously corrupted the youth of the realm . . . thou hast built a paper-mill" (Shakespeare 2 Henry 6): The first thing we do is destroy all the filing cabinets' by Dr Gabriel Egan, Department of English and Drama, Loughborough University

Preamble

This paper is intended to be polemical and to stimulate debate. For rhetorical purposes, I might occasionally overstate my case. I'd appreciate it if delegates took this in the spirit intended, which is not to denigrate anyone's particular work but to exhort some fundamental changes in our working practices.

In the 15 years since computers started to appear on English tutors desks, their most notable effect has been to turn the trickle of paper circulating in university departments into a flood. Rather than exploiting the computer's power to turn paper-text into infinitely copyable, full-text searchable e-text, almost all users filled their rooms with dead trees. Furthermore, new technology has encouraged tutors to develop online courseware, especially websites and CD-ROMs, that merely replicate teaching material already available on paper. Only a tiny minority of such courseware exploits the new media's unique features, and all 'solves' non-existent problems in teaching English. In particular, the proprietary Virtual Learning Environments (VLEs) called Blackboard and WebCT present a danger to our profession, for they appeal to our university managements as a way to privatize the intellectual materials of academics and ultimately to deskill higher educational teaching. I mean, in essence, that even after the disillusion of the dot-com bubble bursting 5 years ago, university managements still harbour the hope that the new technologies will save money because, as has happened in service industries such as banking, machines can do most of the work formerly done by people.

I have seen nothing done with Blackboard and WebCT that cannot be done with ordinary, open-standards websites using HTML and some fairly trivial server-side scripting. The reasons to favour open standards are ones of intellectual property (your property) and transportability. If you do your work using standards ratified by the International Standards Organization (ISO), which is a branch of the United Nations, you can be reasonably sure that it will work on a variety of hardware and software platforms. If you do your work in Blackboard or WebCT, you can be sure that it will only work on systems that the makers of Blackboard and WebCT want it to work on. The software providers intend to lock you into their systems, and the way they do it is by providing what they hope are simple interfaces that help you get started. Once you're started, you're locked in.

We must rethink computer use in English studies from a first principle: computers excel at perfect, free copying. Rather than developing new courseware, we must concentrate on transferring to the electronic medium the paper resources we currently use. We must urgently clear our filing cabinets by scanning what we really need and throwing the rest away, and then move on to clearing our bookshelves. Once the majority of our material is inside the computer, we can respond to any request--'May I see that article?', 'What are the essential

materials for this course?', 'How many versions of Ode to a Nightingale are there?'--by handing over electronic copy for the questioner to reproduce at will. There are, of course, technical and intellectual property matters to consider here, but we should not pay much respect to the legal opinions currently being given. The most important development in literary culture at the moment is the project by Google Incorporated to digitize millions of books, one arm of which proceeded without checking copyright status with publishers or authors. Currently this project is stalled by lawsuits concerning the nature of 'fair use', but in the long term the power of digital reproduction over print reproduction will necessarily change the law rather than the law holding back the technology.

What should we as English academic do about all this? My answer is that, as professionals morally charged with the maintenance and dissemination of the literary part of our cultural heritage, we should 'pirate' as much as we can. That is, we should wherever possible digitize resources that we use and share them, and also share digital resources that we have purchased, and all without regard for copyright. It is no exaggeration to say that the new media are fundamentally altering the nature of property within late industrial capitalism, and that old notions of ownership simply do not apply in the new situations. There is already a reality of mass violation of old copyright laws in the form of users sharing music, films, and software over peer-to-peer (P2P) networks on the Internet and by copying and swapping their CDs and DVDs. This shows how the technology of almost instantaneous and absolutely perfect digital reproduction makes a mockery of laws written in the days when copying was painfully slow and never perfect. Moreover, the new technologies are throwing up their own new models of knowledge creation and dissemination, shown best in such phenomena as the Open Source software projects by which we get miracles like the Linux operating system¹ and the collaborative-writing wiki movement that produces such beauties as the Wikipedia online encyclopaedia.² New right-managements frameworks such as the Creative Commons (CC) licence³ might bring a little order to these processes, but the important point is that the old licences just won't do and we should not consider ourselves bound by them.

If this sounds like reckless talk, it is worth noting that no-one in academia has ever been prosecuted for breaking the old licensing rules using the new media, and I suggest that we ought not allow ourselves to be cowed by legal opinions (for which our employers pay a lot of money) that inhibit our copying of the materials that we use in teaching and research. The very impermanence of online resources puts us under a moral obligation to pirate as much as possible, because we cannot rely on the materials surviving any other way. To see why not, take the example of the BBC's splendid LaserDisc project to create a new digital Domesday book recording life in the United Kingdom 900 years after the first Domesday Book. The resources assembled for this project are effectively lost to us all because as a standard for dissemination the LaserDisc and its associated home computer, the Acorn/BBC micro, are incompatible with the standard computer systems in use today.⁴ If piracy of materials from the project had been widespread--that is, if users had possessed the technical means to violate their licence conditions by copying what they wanted--most or all of the raw material of the project would be available to us in some form.

This is not wishful thinking on my part: we have a clear precedent for it. As is well known, the BBC routinely wiped and reused tapes of radio and television programmes from the 1950s and 1960s, and in many cases the only surviving copies are illegal pirated recordings made off-the-air by listeners and viewers and stored at home. The BBC is now grateful to receive copies of these illegal recordings to fill the extensive gaps in its broadcasting archive. On a personal level, I'm sure I'm not the only person here whose list of publications includes an article commissioned for an academic website that no longer exists. In my case, the I only hope that (contrary to the terms of use published on the site) people did copy material from the Arden Shakespeare's now defunct ArdenNet

website, else I'm the sole possessor of an text that was once widely available and that has been cited in more than one printed book.⁵ I'm aware that new technologies such as the Digital Object Identifier (DOI) scheme are supposed to save us from some if not all these problems of impermanence in the future, but I remain sceptical.⁶ The BBC Domesday LaserDisc project, of course, pre-WorldwideWeb and it relates to the preceding argument about the important of piracy only by analogy. The obsolescence of formats is merely another way, apart from the break in the supply chain, by which might easily lose access to essential digital materials, and it should teach us the same lesson: don't accept the formats and rules dictated by publishers, rather make whatever uses you want of the material in order to preserve it.

Generally, large software corporations such as Adobe and Microsoft make new digital formats and software backwardly compatible with the old ones, so that (for example) if you buy the latest version of the Word word-processing program you can read documents made in any of the previous versions. Of course, if you stick with your old version of Word, you'll increasingly find that other people are making documents in the new format and you cannot read them; this incentive to buy the latest version of its products is central to Microsoft's sales strategy. Were it not for this strategy, we'd all be using Word version 2 because it has virtually all the functions we ever need, and Bill Gates would not be rich. Microsoft and Adobe are sufficiently large that they must take care to ensure at least backward compatibility in their products (that is, the new software can still read the old data): they do not want to be seen to hold to ransom the users of their formats. Smaller companies, however, have more incentive to be sharp in their practices, as one can see from the BBC's experience with the Real Audio format. The BBC was persuaded to convert thousands of hours of radio broadcast content into the proprietary Real Audio format rather than use open-standard MP3 audio, and it had assurances from the supplier, Real Networks Incorporated, that listeners would always be able to download a free copy of the Real Audio player in order to receive this content. Now, it is still possible to get from Real Audio a free copy of their player, but the company's website is so constructed as to make it difficult: almost all the links take you to an offer to buy the latest version of the player using your credit card, or a free version of it that expires in 14 days. Essentially the same situation obtains with formats used internally by proprietary VLEs such as Blackboard and WebCT, which put us at the mercy of corporations. The Betamax versus VHS war of videocassette technology in the 1980s shows that technological superiority is no guarantor of success in such a battle between closely-related formats.

In conclusion, then, I urge academic developers of electronic teaching materials to be as daring as their universities will let them get away with in their use of technologies of dissemination, thinking always not what is strictly within the terms of the licence but what is most likely to perpetuate these intellectual and artistic goods long after the current generation of lawyers (who write the end-user licences) are dead. Of course, just as we should not pay too much attention to others' claims about intellectual property, we should not ourselves overstate our rights to our materials. Those of us whose salaries are paid by the state should not consider what we do in teaching or indeed research to be private property. In resisting the privitization of knowledge, the principles of openness cut both ways. It is important that we do not repeat the fiasco of the BBC Domesday project, in which what we might call 'edition one', the 950-year old paper version, turned out to have a longevity 100 times as great as that of 'edition two', the digital version, which was unusable within a decade of its creation. If we stick to the letter of the law as laid down in the end-user licences, the new technologies represent a massive shift of power towards publishers and away from readers. Fortunately, by the familiar dialectic of technological progress, the new media also give us the means by which to frustrate the terms of these licences. I would encourage English scholars to grasp these means and exploit them to the full.

Notes

1 See <http://www.opensource.org/> and sourceforge.net for more on the Open Source movement.

2 See wikimediafoundation.org for more on the wiki movement.

3 See creativecommons.org

4 There have been heroic attempts to 'reverse engineer' the Domesday Project in order to recover the materials. The work of the CAMiLEON project at University of Leeds and University of Michigan showed that the original hardware and software could be emulated in modern personal computers, and although it produced a working system that can read the original LaserDiscs the raw materials have not been made publicly available; see <http://www.si.umich.edu/CAMiLEON/>. Another team of engineers working in collaboration with the National Archive has pulled out the digital data from the project, but not the moving video and sound, and their results are available on the web at <http://www.domesday1986.com/>. For an account of the technical projects to recover all the material on the BBC Domesday disks, including archiving the video and sound streams, see the article at www.ariadne.ac.uk/issue36/tna/

5 Because ArdenNet foolishly demanded that users register for a free userid and password to access the contents of the site, automated WWW archiving engines such as the The Wayback Machine <<http://www.waybackmachine.org/>>, which cannot make an application for a free userid, were kept out of most of the site and captured only the introductory pages.

6 See <http://www.doi.org/> for an account of this scheme.